Social dimensions of private well testing:

Why don't people test their well water?

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Purpose of Survey Research

To understand factors that influence private well testing and identify ways to increase well testing

Photo, MI DEQ

- **Survey design & implementation**
- **Results**
  - **All populations**
  - **Comparisons between states**
- **Conclusions & Implications**

Photo, B. Liukkonen

Survey Research

- 3-state project, funded by Extension Great Lakes Water Program
- 600 surveys in MN and MI; 1400 in WI
- Survey design fall 2006, mailed March 2007
- Results returned March-May, 2007

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Survey Process

- Iterative development & cognitive testing
- 44 questions
- Mailed introductory letter 1 week before
- Survey, cover letter, SASE, and incentive
- 2 reminder postcards
- 1700 surveys returned (68% return rate)

Targeted Survey Recipients

- Counties with **Arsenic** or **Nitrate** risk
  - 3 in MN; 9 in WI; 4 in MI
- **Well test program** participants
  - Random selection or all selected
- **Non-test program** residents
  - Random selection

Challenges

- Developing questions
  - To give useful information
  - Understandable – answerable
- Dealing with addresses, tax files
- Signing & mailing
- Incentives

Photos: B. Liukkonen

Survey Returns: March - May

	WI $2 + free test	MN $2 Bill	MI Coupon for free test
Surveys mailed	1459	596	635
Surveys completed	1057	386	290
Return Rate	**72%**	**65%**	**48%**

Demographics - Gender & Age

	MN	WI	MI
Male	63%	56%	52%
Female	37%	44%	47%
Mean age 3 = 40-49 4 = 50-59	3.95	3.81	3.98

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More demographics

	MN	WI	MI
Mean Years	19.9	17.9	18.6
Child in home	36%	39%	39%
Education **3=some tech/college** **4= tech school** **5=college**	3.53	3.57	3.73

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Were survey respondents representative?

- Education slightly higher in most counties
- Income levels higher in many counties

Results

- Water use & related beliefs
- Well testing & related beliefs
- Information needs and preferences

Do they drink well water?

ALL

- **33% mostly to always drink untreated well water**
- **53% seldom to never drink untreated well water**
- **14% mostly to always drink purchased bottled water**

≥ 10 ppb arsenic, n=111

- **15% drink untreated well water**
- **73% do not drink untrt. well water**
- **27% drink purchased bottled water**

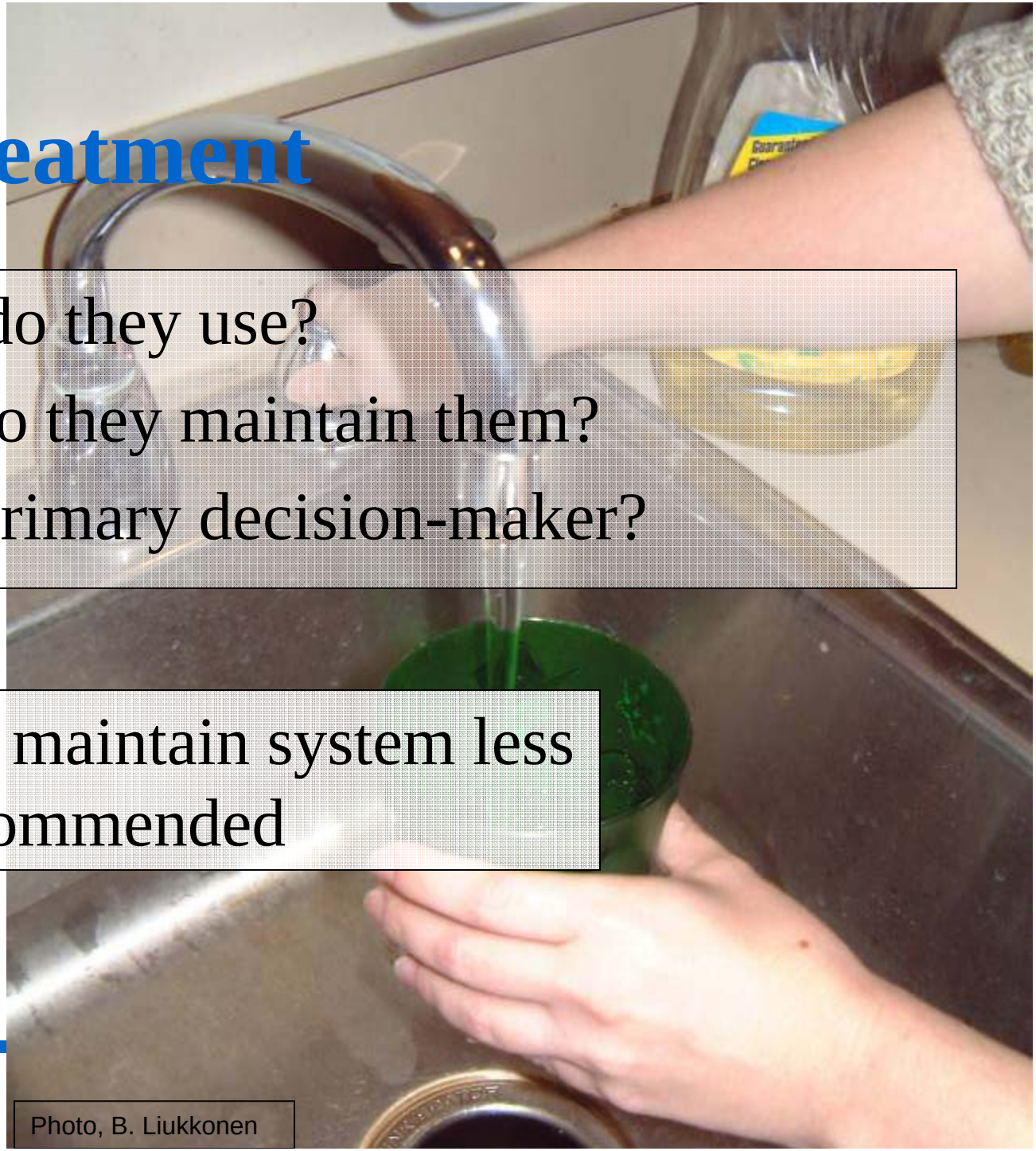
Variables r/t Drink Less Untreated Water

	All	Arsenic Test
	N = 1594	**N = 273**
Explains :	**30% of variance**	**32%**
Taste, odor, looks	**15.7**	**6.7**
Arsenic Risk Area	**7.0**	**4.1**
Unsafe water belief	**4.1**	**1.6**
More years home	**-3.8**	**-3.0**
Education	**2.9**	1.3
Gender	0.3	0.9
Arsenic test result	-	-0.1

Water treatment

- What types do they use?
- How often do they maintain them?
- Who is the primary decision-maker?

32% said they maintain system less often than recommended



Photo, B. Liukkonen

Opinion of well water safety …

- Before any treatment? *(all states combined)*

Very unsafe	Unsafe	Somewhat Unsafe	Somewhat Safe	Safe	Very Safe
4%	5%	11%	13%	**47%**	**20%**

67% believe their untreated well water is Safe or Very Safe

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How worried about health risks?

- From untreated well water?

	Very Worried	Worried	Slightly Worried	Not Worried
ALL	3%	10%	**35%**	**52%**
≥ 10 ppb arsenic	11%	**22%**	**47%**	21%

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‘Predictors’ of Well Testing: n=1578

Variables: explain 10% of variance	**Stand. Beta**
Know more who tested	**11.0**
Education	**5.7**
Older age	1.9
Arsenic Risk Area	1.7
Years in home	1.1
Worry	0.5
Unsafe	-0.3
Taste, smell, looks	-0.3

What would prompt a water test?

- Neighbor's well contaminated - **86%**
- Change in taste, odor, looks - **86%**
- Well testing program available - **66%**
- Unexplained health problems – **63%**

What would prompt a water test?

(Continued)

- Contamination in the area – **61%**
- State or local requirement – **59%**
- Getting a reminder or discount - **33%**
- New baby living or visiting – **28%**

Why did you test?

- To know if my water is safe – **40%**
- Testing program offered – **29%**
- New well - **16%**
- Real estate transaction – **14%**
- Infants or pregnant woman in home – **12%**
- Test regularly – **8%**

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Main reasons for not testing?

(people who haven't tested)

- We've been drinking for years – **53%**
- **Didn't know what to test for – 41%**
- **Don't know how – 35%**
- It's probably fine – **25%**
- **Didn't know I should – 17%**
- **It costs too much – 17%**

Main reasons for not testing?

(continued)

- Wait for others – **12%**
- Dealing with problem would be $ - **12%**
- Missed the testing program – **8%**
- I don’t want to know – **8%**
- We don’t drink it – **7%**

Thoughts about water testing

among those who hadn't tested

- **41%** - Never thought about it Raise awareness
- **12%** - Thought, but not going to test
- **6%** - Plan to test in next year
- **41%** - Plan to test sometime

Water testing preferences

- How would you prefer to get the kit?
  - Mailed to them or pick up at local location
- Where would you want to test?
  - Didn't care or didn't know
  - Extension office or County Lab
- How would you prefer to get test results?
  - By mail with brochure or with phone call

Where would you 1st look for info?

MN	WI	MI
Local health 23%	**Online** 23%	**Local health** 36%
State health 20%	**Local health** 22%	**Online** 25%
Online 17%	**Water test lab** 16%	**DEQ** 13%
Extension 16%	**State Health** 15%	**State Health** 12%

Internet at Home?

	MN	WI	MI
Internet at Home	72%	75%	73%

Conclusions

- People believe their water is safe
  - Sometimes without validating information
- Barriers to testing:
  - Don’t know they **should** test, **how** or **what** to test for
  - Cost
- Local arsenic risk prompts testing (not nitrate)
- People want info. from local sources & online
- More people test outside programs than through programs

Implications for Increasing Private Well Testing

- Regular programs can increase testing rates
- Provide clear outreach materials
- Provide information online and easily accessible
- Partner with local Public Health Departments & private labs

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